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MARTIN COMPANY

BALTIMORE, MARYLAND

CONTRACT NAS 8-11555

THIRD QUARTERLY PROGRESS REPORT

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Introduction

This is the third quarterly progress report to be submitted as required by Contract NAS 8-11555.

The program plan was modified to include the five additional units covered by the contract amendment received during May 1964. Progress against the program plan is summarized below:

<u>Milestone</u>	<u>Schedule Date</u>	<u>Actual Date</u>
1. Receipt of Ten Extrusions	12/31/63	1/3/64
2. Receipt of First Machined Extrusion	1/31/64	2/15/64
3. Complete Forming of First Unit	3/6/64	3/6/64
4. Complete Heat Treat of First Unit	3/20/64	4/9/64
5. Complete Shot Peening of First Unit	4/3/64	4/24/64
6. Receipt of Tenth Machined Extrusion	4/10/64	4/8/64
7. Complete Anodizing First Unit	4/17/64	5/15/64
8. Start Tests of First Unit	5/8/64	6/1/64
9. Complete Forming Tenth Unit	5/15/64	6/5/64
10. Complete Heat Treat Tenth Unit	5/29/64	6/19/64
11. Complete Tests of First Unit	6/5/64	7/1/64
12. Complete Shot Peening Tenth Unit	6/12/64	7/24/64
13. Complete LOX Cleaning First Unit	6/19/64	7/20/64
14. Complete Anodizing Tenth Unit	6/26/64	
15. Receipt of Five Extrusions	7/15/64	7/3/64
16. Start Tests of Tenth Unit	7/17/64	
17. Five Units on Dock Boeing	8/4/64	7/28/64*
18. Complete Tests Tenth Unit	8/14/64	
19. Complete LOX Cleaning Tenth Unit	9/18/64	
20. Second Five Units on Dock MSFC	9/25/64	
21. Complete Forming Fifteenth Unit	10/9/64	
22. Complete Heat Treat Fifteenth Unit	10/23/64	
23. Complete Shot Peening Fifteenth Unit	11/13/64	
24. Complete Anodizing Fifteenth Unit	12/4/64	
25. Complete Testing Fifteenth Unit	12/24/64	
26. Complete LOX Cleaning Fifteenth Unit	1/8/65	
27. Third Five Units on Dock MSFC	1/29/65	

* Shipped on 7/28/64 to Boeing-Michoud in accordance with directions from the Contracting Officer.

It will be noted that the first five units were shipped in sufficient time to meet the contract schedule. It appears that the contract delivery requirements for the second and third lots of five units will be met.

Discussion of Work Performed During the Quarter

The forming and internal machining operations for ten units were completed without any major problems.

The METLAB Company completed the heat treating operations on ten units. Two units (S/N 0017 and 0019) had rust particles imbedded in the surface due to improper cleaning of the fixture. This situation was corrected as reported last quarter, and the two units were subsequently reworked (see below).

The Metal Improvement Company completed shot peening operations on ten units. No problems were encountered.

The J.W. Rex, Co. initiated anodizing operations during this quarter and seven units were completed during this quarter. One unit (S/N 0017) had to be reanodized because of a problem encountered (see below).

Production acceptance testing at Martin-Baltimore was started on 6/1/64. Initial attempts to achieve proof pressure, using helium as the pressurizing medium, failed because of insufficient compressor capacity. The Test Plan was revised to permit pressurization directly with liquid nitrogen. A liquid nitrogen pump was purchased and installed and five units were successfully tested.

Discussion of Problems Encountered During the Quarter

As mentioned above, two units (S/N 0017 and 0019) had rust particles imbedded in the exterior surface as a result of rust on the heat treat fixture. The local areas were reworked to remove the pits and particles but as a result of the rework a local area in each unit was under the minimum wall thickness of .890 inches. DAR forms were prepared and approved by MSFC on the basis of two units in the qualification program which successfully passed all tests with equivalent undersize local areas.

These local areas were vidigaged after proof test to insure that no further reduction in thickness occurred. The vidigage measurement was made using a dye colored oil for a couplant. The dye penetrated the anodic coating on one unit (S/N 0017) which was then stripped and re-anodized. Plain water was used as a couplant on the other unit.

Work Planned for the Next Quarter

During the next quarter the second lot of five units will be completed and shipped. The third lot of five will be complete through the forming and heat treating stage.